PERFORMANCE ANALYSIS OF A FOULED AXIAL-FLOW COMPRESSOR BLADES OF A GAS TURBINE

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"We declared that this thesis is the result of our own work except the ideas and summaries which we have clarified their sources. The thesis has not been accepted for any diploma and is not currently submitted in candidature of any diploma."

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ABSTRACT

The axial-flow compressor consists of a series of stages, each comprising a row of rotor blades followed by a row of stator blades. The working fluid in our thesis regarded as an air is initially accelerated by the rotor blades. Then, this working fluid was decelerated in the stator blades passages. The kinetic energy transferred in the rotor is converted to static pressure. The process is repeated in as many stages as are necessary to yield the required overall pressure ratio.

However, the process that repeated in as many stages finally make the blades change. The changing that we talk here is not a really big change, but it is a tiny one. The changing that no body care about it. But, because this two characteristics, first it is micro and second no body take note, so this thing become more interesting.

The change that we discussing here is the changing that happen at the blade inlet and outlet angle. This thing is happen because the working fluid that go through the compressor finally left the particles onto the blade surface. The existence of this particles make the camber line change, and from that the blade angles are change too.

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